

NOTES ON MR. FROGGATT'S COLLECTIONS MADE
DURING THE YEAR 1887, IN THE VICINITY OF
DERBY, KING'S SOUND, N. W. AUSTRALIA.

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Mr. Froggatt, the well-known New Guinea Explorer, left Sydney in March last, for King's Sound, with the intention of spending a year, in making a collection for the Macleay Museum of the zoological productions of that part of Australia.

Since his departure I have received from him two consignments of specimens; the first of them was briefly noticed at our meeting of June last, the other only just received, is now noticed for the first time. I propose in the following notes to give a general sketch of both these collections, in order, so far as they will admit, to give some idea of the character of the fauna of that almost unknown portion of Australia. The Fauna of Port Darwin and its neighbourhood has of late years been pretty well investigated, but that lies nearly 500 miles north of King's Sound and in a very different description of country, while to the south the nearest point until lately visited by naturalists is Nicol Bay, some hundreds of miles distant. My anticipations therefore of finding a widely different fauna with some approach to that of the Dutch East Indian Archipelago, were not altogether unreasonable. The result, however, is quite the opposite. A more thoroughly characteristic Australian Fauna there cannot be. The species are many of them, I may say mostly, new, but they are all of Australian forms and genera, and with one or two exceptions present nothing striking. These observations are general and apply to all the animal divisions, but it is only among the insect

orders that I can speak with certainty, because it is only of them that the collection is sufficiently extensive to admit of tolerably satisfactory evidence. The country actually collected over by Mr. Froggatt is limited to a few miles round Derby, and I am enabled by means of a good geological map of the district sent to me by Mr. Froggatt, to give some idea of the character of the country. The coast on the east side of King's Sound is low and swampy, bounded eastwards by "Pindan" sands and gravels, a pliocene formation which extends inland for upwards of 60 miles, and is backed by limestone ranges of the carboniferous period. Beyond these ranges and from 100 to 150 miles from Derby, the hills are more elevated and consist of metamorphic schists and quartzite, with occasional outbursts of basalt. Along the course of the rivers and rivulets falling into the Sound, are wide deposits of alluvium and river gravel, and large patches of a similar alluvium are found spread throughout the "Pindan," which occupies the undulating country lying between the rivers. Throughout the "Pindan," occasional hills of carboniferous sandstone grits and conglomerates crop out. It may be inferred from this that the country for a long way inland from King's Sound is of a dry character, with a far from luxuriant vegetation, and as a necessary result, not very rich in animal life.

Notwithstanding this the collection of insects is very large and very interesting, and the great preponderance of very minute species bears testimony to the skill and diligence of the collector.

The unusual numbers of some groups of Coleopterous insects, with the paucity of others, generally the most numerous in other parts of Australia, is certainly the most striking thing about this collection. Out of a total of 334 species of Coleoptera in the collection received a few weeks ago, there are 87 species of *Carabidae*, or more than $\frac{1}{4}$, a most unusual proportion, and of them all but about eight are ground beetles. There are 32 species of

water-beetles, and 24 of *Staphylinidæ*, both far above the Australian average. The Lamellicornes number only 17 species, all with the exception of one *Trox*, very ordinary looking things; no *Cetoniidæ* and no *Rutelidæ*. The absence of *Buprestidæ* is still more noticeable, *Stigmodera Duboulayi*, Saund., being the only representative of that thoroughly Australian and almost universally prevalent genus. The Sternoxi generally are very few, the Malacoderms fewer. The Heteromera are few and not in any way remarkable; the *Carculionidæ* are chiefly very minute, and decidedly under the usual numerical proportion to other insects. There are only 16 species of Longicornes, all common forms. The Phytophagous Tetramera are numerous enough. The anomalous character of the collection must not however be too readily accepted as an index of the fauna. Various circumstances may account for the absence of some groups and the prevalence of others; for instance, the paucity of the *Buprestidæ* and anthophilous Lamellicornes may be owing to the season of the year being unsuitable; the end of the rainy season is generally looked upon as the proper time for the appearance of these insects. Again, the disproportionate number of *Carabidæ* such as *Clivina*, *Bembidium*, *Trechus*, and of water-beetles and *Staphylinidæ* may only show that Mr. Froggatt had chiefly collected during the dry season on the alluvial banks of the streams near the coast.

I may state that, as far as I can judge from present observations, quite one-third of the species are new. The Lepidoptera—chiefly diurnal—more resemble those of New South Wales than of North Australia; the beautiful butterflies of Northern Queensland of Papuan affinity are entirely absent, the only *Papilio* being *Sthenelus*, and *Pieris Teutonia* is apparently the most common species. The only novelties are *Danaïs Petilia* and *chrysippus*. The Orthoptera are few in number, but seem entirely different from those of Eastern and Northern Australia; and indeed the same may be said of the Hemiptera, Hymenoptera, and Diptera; but the collection in these orders is very limited in numbers.

Of Mollusca there are about 20 species of land and freshwater shells of the usual genera, but the species new. There are also in the collection a great variety of other invertebrates in tubes which I have not yet examined. The mammals of this collection were exhibited by Mr. Masters at our last meeting. The birds are few in number, and of the usual West Australian species. The Reptilia are interesting and peculiar. The snakes comprised six species—*Nardoa Gilberti*, Gray; *Dipsas* n.sp., *Brachysoma simile*, Macleay; *Pseudechis Darwiniensis*, Macleay; *Diemenia* n.sp., *Acanthophis* sp. (?). The Lizards are *Varanus Gouldii* and *punctatus*, *Chlamydosaurus Kingii*, *Physignathus Gilberti*; five species of *Amphibolurus*; five species of *Lygosoma*, a new *Cyclodus*, *Ablepharus Boutonii*, *Delma Fraseri*, and six species of *Geckotidæ*. The River Fishes consisted of three species of *Therapon*, *Aristeus* sp., *Belone* sp., *Gobius* sp., *Chatoessus Erebi*, and *Toxotes jaculator*.